Hydrological Summary for Great Britain

APRIL 1994

Rainfall

Throughout much of Britain, weather patterns during April were typically capricious. Boisterous conditions - wet, windy and cool - characterised the first fortnight but high pressure prevailed thereafter in the English lowlands and temperatures climbed towards month-end. Due in large part to sustained rainfall associated with a sequence of vigorous Atlantic frontal systems early in the month, April rainfall totals were above average in all regions - notably so in some western areas; a few sheltered districts, mostly in eastern England, were relatively dry. Great Britain rainfall totals have been well above average for each of the last five months. In western Scotland, the 1993 autumn drought has been succeeded by a very wet winter and spring - the latest in a notable cluster. Over a longer timespan an even more remarkable transformation may be identified in the English lowlands. For England and Wales, the Sept - April rainfall total is amongst the ten highest in the full national rainfall series, from 1766; only 1976/77 and 1960/61 have been wetter in the recent past. Over large parts of eastern England especially, the last eight months culminate a wet episode stretching back to March 1992. Some localities have registered fewer than six months with below average rainfall over the ensuing period (only one over the last year) which for many East Anglian catchments is the wettest for which areal rainfall figures have been derived. This, following immediately on the driest two-year sequence (the climax of the 1988-92 drought) on record. There appears to be few, if any, modern precedents for a transformation of this magnitude.

River Flow

Following widespread spate conditions - but few incidents of flooding - in early April, runoff rates generally declined. However, aided by snowmelt in parts of northern Britain and high baseflows in much of the English lowlands, monthly runoff totals mostly exceeded the April average by a wide margin (exceptions included some smaller catchments in the lee of the Pennines and in the lower Trent Valley). New maximum April runoff totals were established for many rivers including the Little Ouse, Mimram, Piddle, Taw and, most notably, the Severn (in a record from 1921). Catchments eclipsing runoff maxima for the December-April period show an even wider distribution and accumulated runoff totals over the last 12 months are at, or near, record levels throughout the greater part of the country. The Mimram epitomises many eastern Chalk rivers: 1993/94 has seen record flows established over a range of timespans; most strikingly, runoff for the 20 months from September 1992 equalled the highest on record - runoff for the preceding 20 months matches the lowest in a 43-year series! In Scotland, the sweep of new records for the Clyde testifies to the exceptionally high runoff rates which have been a feature of western catchments for most of the last six years.

Groundwater

With soils close to saturation early in the month, most aquifers received appreciable recharge but, by month end, significant soil moisture deficits extended across much of the English lowlands - confirming the close of one of the most protracted recharge seasons in the recent past. Accelerating evaporation rates limited groundwater replenishment in April but recharge was sufficient to moderate recessions and, in some areas, to generate further modest water-table rises. Groundwater levels have declined relatively steeply in the Chalk of Yorkshire but remain well above the seasonal average throughout the majority of the Chalk outcrop. This is also broadly true of the other major aquifers. Particularly healthy levels typify the Permo-Triassic sandstones of the South-West and, in the Midlands, the characteristically slow recovery in the confined aquifer is continuing - average levels being approached at a number of index boreholes for the first time since 1988. The dramatic transformation in hydrological conditions over the recent past is perhaps best illustrated by the hydrographs for the Washpit Farm and The Holt boreholes - as elsewhere, the range of recorded variation has been extended over the last four years.

General

Reservoir stocks have begun to decline but still remain close to capacity - above 90% for most major impoundments. The water resources outlook is very healthy and the elevated water-tables will provide a continuing baseflow benefit to lowland river flows throughout the coming summer.

Institute of Hydrology

British Geological Survey

Data for this report have been provided principally by the regional divisions of the National Rivers Authority* in England and Wales, the River Purification Boards in Scotland and by the Meteorological Office. Reservoir contents information has been supplied by the Water Services Companies, the NRA or, in Scotland, the Lothians Regional Council. The most recent areal rainfall figures are derived from a restricted network of raingauges and a proportion of the river flow data is of a provisional nature.

A map (Figure 3) is provided to assist in the location of the principal monitoring sites.

Financial support towards the production of the Hydrological Summaries is given by the Department of the Environment and the National Rivers Authority.

The Hydrological Summaries are available on annual subscription at a current cost of £48 per year - enquiries should be directed to the National Water Archive Office at the address below. No charge is made to those organisations providing data for the Summaries.

* For reasons of consistency and to provide greater spatial discrimination, the original ten regional divisions of the NRA have been retained for use in the Hydrological Summaries.

MORECS

Most of the recent monthly regional rainfall data featured in the Hydrological Summaries are MORECS assessments. MORECS is the generic name for The Meteorological Office services involving the calculation of evaporation and soil moisture routinely for Great Britain. Products include a weekly issue of maps and tables of potential and actual evaporation, soil moisture deficits, effective rainfall and the hydrometeorological variables used to calculate them. The data are used to provide values for 40 km squares - or larger areas - and various sets of maps and tables are available according to user requirements. Options include a day-by-day retrospective calculation of soil moisture at any of 4000 rain-gauge sites.

Further information about MORECS services may be obtained from: The Meteorological Office, Sutton House, London Road, Bracknell, RG12 2SY

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12 May 1994

TABLE 1 1993/94 RAINFALL AS A PERCENTAGE OF THE 1961-90 AVERAGE

		Apr 1993	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 1994	Feb	Mar	Apr
England and Wales	mm	94	89	68	80	54	110	90	73	165	122	82	93	75
	%	157	139	105	129	71	143	106	81	176	139	130	129	125
NRA REGIONS														
North West	mm	123	128	57	109	80	87	51	64	248	145	70	151	112
	%	173	171	70	128	75	76	40	52	200	120	90	159	158
Northumbria	mm	123	119	39	59	77	109	91	64	135	108	70	82	70
	%	220	192	65	91	95	149	120	74	167	129	119	117	125
Severn-Trent	mm	79	80	72	79	43	95	74	66	137	94	71	74	56
	%	144	136	122	149	64	148	116	93	178	134	131	121	101
Yorkshire	mm	102	83	48	68	78	132	62	64	134	117	68	69	60
	%	173	138	80	115	105	194	85	80	161	148	117	101	102
Anglian	mm	71	52	49	69	45	105	90	70	85	73	44	52	50
	%	154	108	96	141	82	214	176	121	155	146	119	111	109
Thames	mm	83	61	57	55	33	103	111	47	104	97	59	49	54
	%	166	109	104	112	57	175	179	72	149	152	131	88	109
Southern	mm	91	58	53	62	37	123	134	62	154	124	63	57	76
	%	172	107	98	129	65	178	168	73	188	155	117	90	144
Wessex	mm	83	62	69	76	36	120	122	63	169	126	99	79	60
	%	157	102	121	146	55	167	154	76	182	145	152	113	114
South West	mm	99	131	108	128	39	168	119	106	264	186	174	124	88
	%	143	182	157	186	46	181	103	85	190	135	172	125	127
Welsh	mm	112	134	99	111	75	118	81	109	259	183	130	177	108
	%	140	163	125	144	74	103	59	77	169	128	134	165	135
Scotland	mm	116	111	75	112	74	76	117	78	223	213	97	243	114
	%	153	129	87	119	63	54	75	52	148	141	95	194	150
RIVER PURIFICATION BOARDS														
Highland	mm	85	93	83	142	89	52	139	69	266	257	84	338	156
	%	93	101	85	134	70	30	70	34	135	137	66	209	171
North-East	mm	69	108	59	79	69	88	171	45	113	132	105	105	76
	%	115	157	89	108	79	101	176	45	122	133	162	135	127
Tay	mm	134	128	58	90	58	100	127	74	157	200	114	229	73
	%	216	154	79	117	62	88	98	61	124	139	120	210	118
Forth	mm	109	120	72	73	50	79	108	73	187	160	88	204	67
	%	185	162	104	97	53	72	94	65	170	136	111	217	114
Tweed	mm	124	131	62	54	52	91	134	55	171	140	86	122	68
	%	218	185	95	74	59	102	141	59	184	140	128	154	119
Solway	mm	165	146	72	101	65	102	54	97	266	197	117	191	112
	%	214	172	86	112	55	71	34	67	180	126	116	163	145
Clyde	mm	159	117	77	137	89	74	67	112	300	269	114	301	130
	%	189	129	83	126	66	41	35	62	168	142	97	205	155

Note: The monthly rainfall figures for the NRA regions for April correspond to the MORECS areal assessments derived by The Meteorological Office. In northern England these initial assessments may have a particularly wide error band associated with them. The figures for the RPB regions for April 1994 were derived by IH in collaboration with the RPBs. The provisional figures for England and Wales and for Scotland are derived using a different raingauge network. Regional areal rainfall figures are regularly updated (normally one or two months in arrears) using figures derived from a far denser raingauge network.

TABLE 2 RAINFALL RETURN PERIOD ESTIMATES

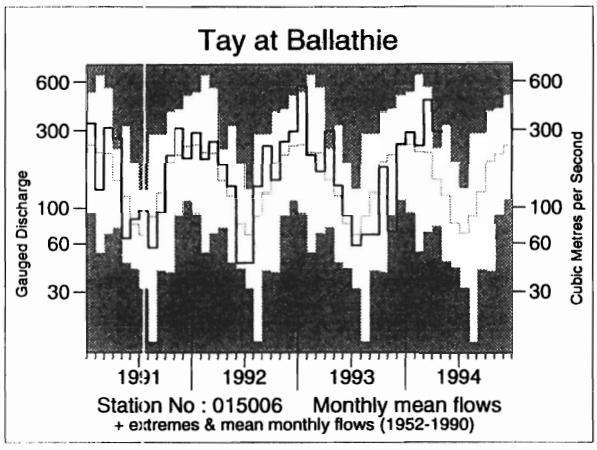
		Jan94-Apr94	Est Return Period, years	Sep93-Apr94	Est Return Period, years	May93-Apr94	Est Return Period, years	Jul92-Apr94	Est Return Period, years
England and Wales	mm	372		810		1101		1959	
	% LTA	131	10-20	129	20-40	123	20-30	118	20-40
NRA REGIONS									
North West	mm	478		928		1302		2394	
	% LTA	131	10-20	109	2-5	108	2-5	106	2-5
Northumbria	mm	330		729		1023		1803	
	% LTA	123	5-10	125	10-20	120	10-20	114	10-20
Severn-Trent	mm	295		667		941		1654	
	% LTA	123	5-10	129	15-25	125	10-20	119	20-30
Yorkshire	mm	314		706		983		1735	
	% LTA	119	2-5	124	10-20	120	10-20	114	10-20
Anglian	mm	219		569		784		1401	
	% LTA	122	5-10	145	100-150	132	40-70	128	150-200
Thames	mm	259		624		830		1557	
	% LTA	121	2-5	133	15-25	121	5-15	123	30-50
Southern	mm	320		793		1003		1781	
	% LTA	128	5-10	140	40-60	129	20-40	123	30-50
Wessex	mm	364		838		1081		1900	
	% LTA	132	5-10	139	30-50	129	20-40	122	30-50
South West	mm	572		1229		1635		2746	
	% LTA	141	10-20	140	50-80	139	150-200	124	50-80
Welsh	mm	598		1165		1584		2838	
	% LTA	140	15-25	120	5-10	121	10-20	115	10-20
Scotland	mm	667		1161		1533		3125	
	% LTA	147	130-170	110	2-5	107	2-5	116	30-50
RIVER PURIFICATION BOARDS									
Highland	mm	835		1361		1768		3764	
	% LTA	147	80-120	102	2-5	101	2-5	113	10-20
North-East	mm	418		835		1150		2033	
	% LTA	138	20-40	123	15-25	118	10-20	112	10-20
Tay	mm	616		1074		1408		2808	
	% LTA	150	40-70	119	5-10	115	5-10	122	50-80
Forth	mm	519		966		1281		2487	
	% LTA	148	50-90	121	10-20	116	5-10	120	40-70
Tweed	mm	416		867		1166		2140	
	% LTA	137	15-25	129	20-30	120	10-20	119	25-45
Solway	mm	617		1136		1520		2954	
	% LTA	137	15-25	109	2-5	107	2-5	111	5-10
Clyde	mm	814		1367		1787		3682	
	% LTA	151	100-150	108	2-5	105	2-5	115	10-30

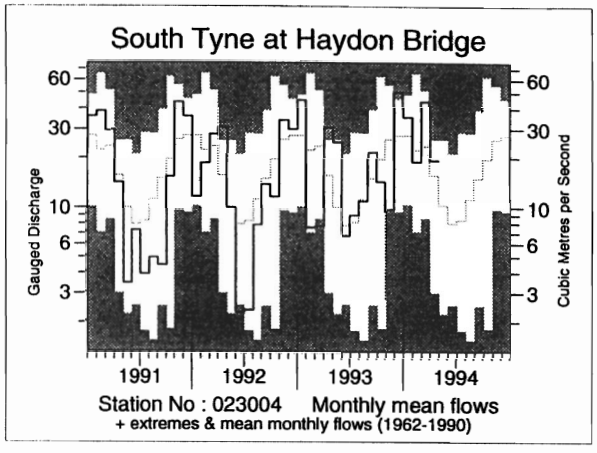
LTA refers to the period 1961-90.

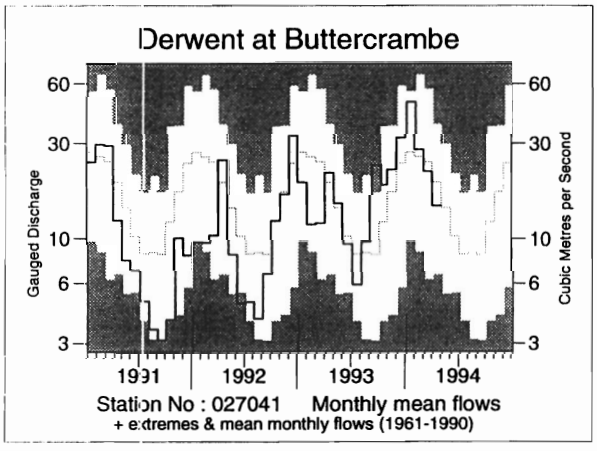
Return period assessments are based on tables provided by the Meteorological Office*. The tables reflect rainfall totals over the period 1911-70 only and the estimate assumes a sensibly stable climate. They assume a start in a specified month; return periods for a start in any month may be expected to be an order of magnitude less - for the longest durations the return period estimates converge. "Wet" return periods underlined.

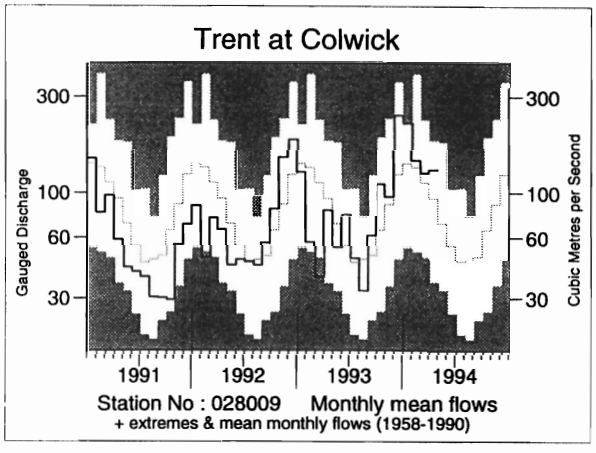
* Tabony, R.C., 1977, The Variability of long duration rainfall over Great Britain, Scientific Paper No. 37, Meteorological Office.

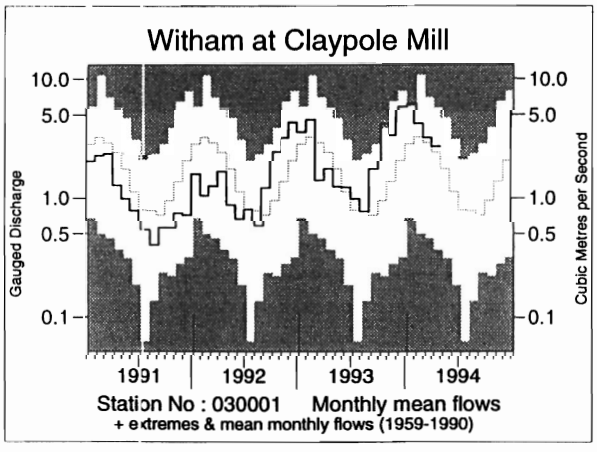
FIGURE 1 MONTHLY RIVER FLOW HYDROGRAPHS

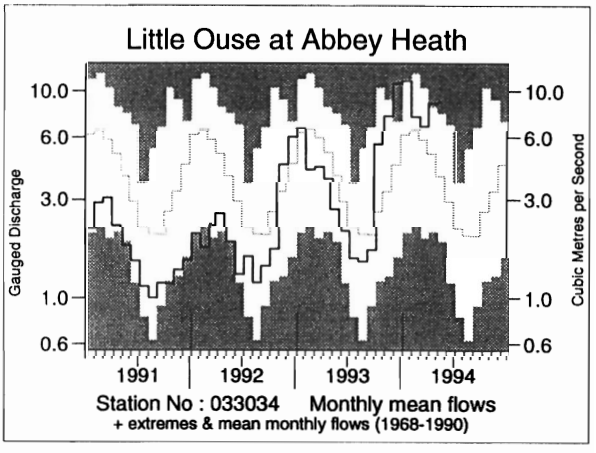


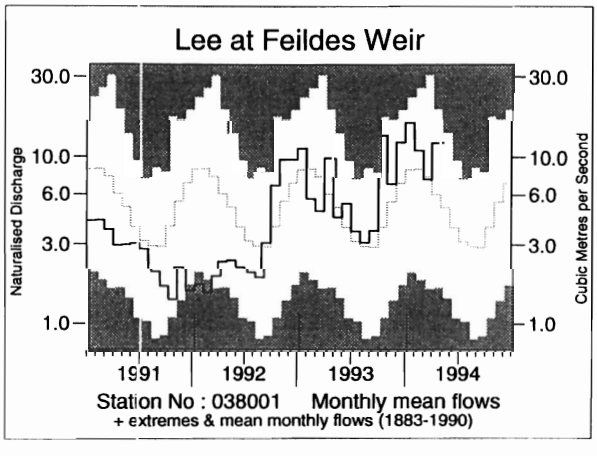


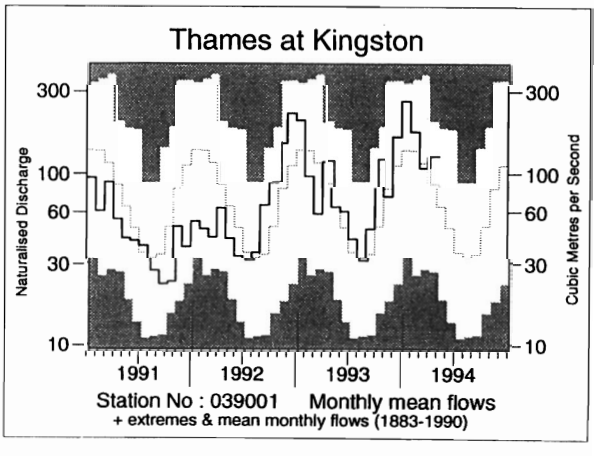


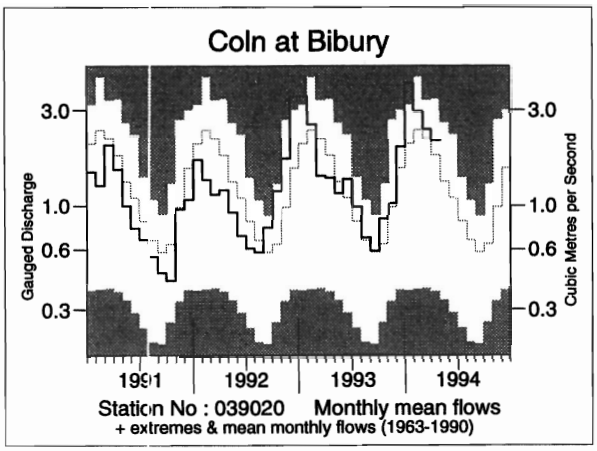


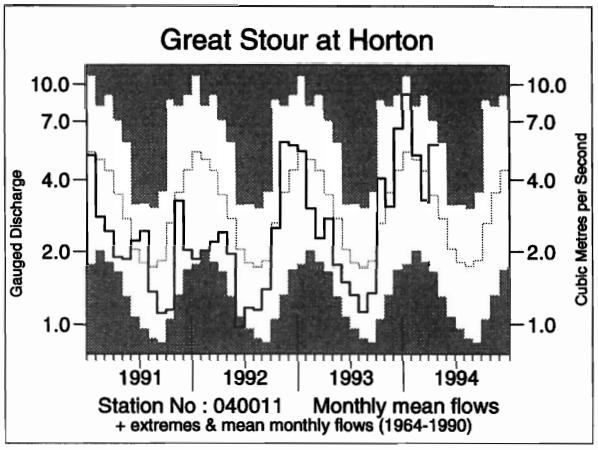


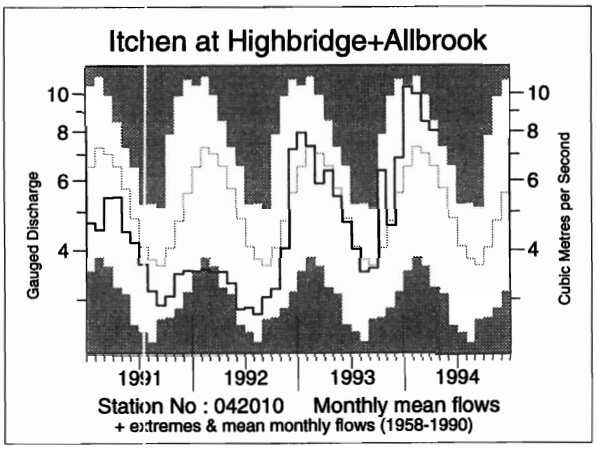


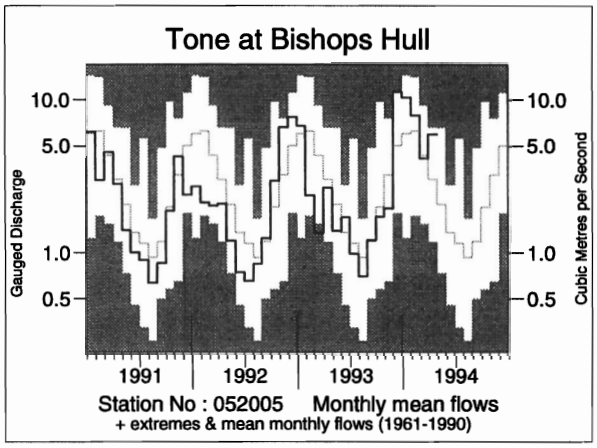


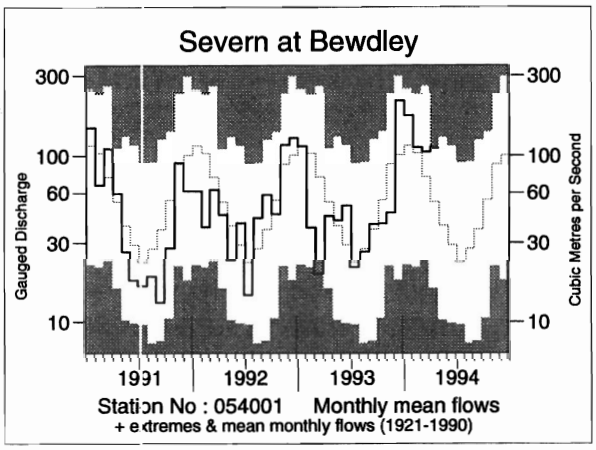


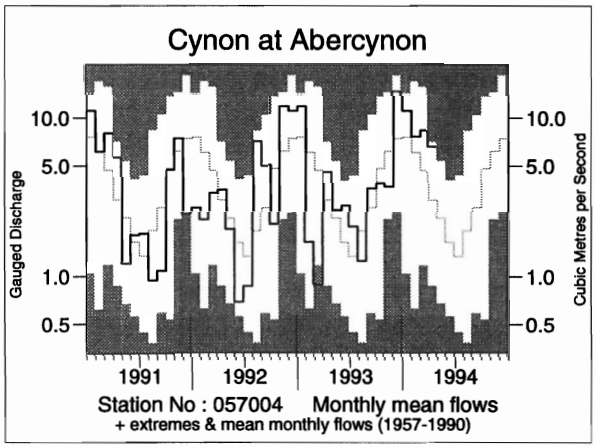

Coln at Bibury
Gauged Discharge
Cubic Metres per Second
3.0
1.0
0.6
0.3
1991
1992
1993
1994
Station No : 039020 Monthly mean flows
+ extremes & mean monthly flows (1963-1990)

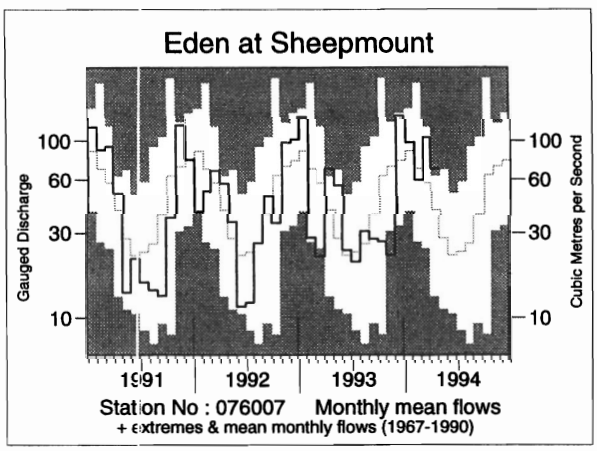

Great Stour at Horton
Gauged Discharge
Cubic Metres per Second
10.0
7.0
4.0
2.0
1.0
1991
1992
1993
1994
Station No : 040011 Monthly mean flows
+ extremes & mean monthly flows (1964-1990)


Itchen at Highbridge+Allbrook
Gauged Discharge
Cubic Metres per Second
10
8
6
4
1991
1992
1993
1994
Station No : 042010 Monthly mean flows
+ extremes & mean monthly flows (1958-1990)


Tone at Bishops Hull
Gauged Discharge
Cubic Metres per Second
10.0
5.0
1.0
0.5
1991
1992
1993
1994
Station No : 052005 Monthly mean flows
+ extremes & mean monthly flows (1961-1990)


Severn at Bewdley
Gauged Discharge
Cubic Metres per Second
300
100
60
30
10
1991
1992
1993
1994
Station No : 054001 Monthly mean flows
+ extremes & mean monthly flows (1921-1990)


Cynon at Abercynon
Gauged Discharge
Cubic Metres per Second
10.0
5.0
1.0
0.5
1991
1992
1993
1994
Station No : 057004 Monthly mean flows
+ extremes & mean monthly flows (1957-1990)


Eden at Sheepmount
Gauged Discharge
Cubic Metres per Second
100
60
30
10
1991
1992
1993
1994
Station No : 076007 Monthly mean flows
+ extremes & mean monthly flows (1967-1990)

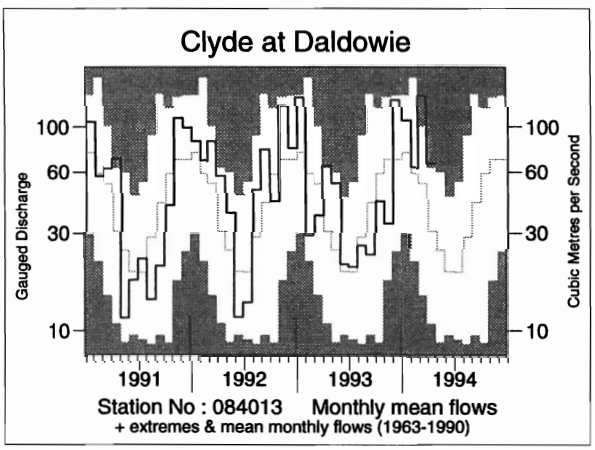

Clyde at Daldowie
Gauged Discharge
Cubic Metres per Second
100
60
30
10
1991
1992
1993
1994
Station No : 084013 Monthly mean flows
+ extremes & mean monthly flows (1963-1990)

TABLE 3 RUNOFF AS MM. AND AS A PERCENTAGE OF THE PERIOD OF RECORD AVERAGE WITH SELECTED PERIODS RANKED IN THE RECORD

River/ Station name	Dec 1993	Jan 1994	Feb	Mar	Apr 1994		12/93 to 4/94		5/93 to 4/94		9/92 to 4/94		5/90 to 4/94	
	mm %LT	mm %LT	mm %LT	mm %LT	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs
Dee at Park	80 93	122 138	64 89	167 178	96 123	17 /22	528 124	22 /22	950 120	20 /21	1628 114	16 /20	3126 98	8 /18
Tay at Ballathie	144 102	169 117	126 110	268 209	166 194	41 /42	873 140	40 /42	1259 110	30 /41	2501 121	36 /40	5001 110	31 /38
Tweed at Boleside	168 175	149 145	78 100	165 205	81 151	29 /34	641 153	33 /33	994 130	33 /33	1716 124	32 /32	3499 116	29 /30
Whiteadder Water at Hutton Castle	98 217	113 194	55 114	51 101	26 67	10 /25	342 142	23 /25	553 140	21 /24	835 117	18 /24	1624 102	10 /21
South Tyne at Haydon Bridge	176 178	126 131	61 83	155 182	67 120	18 /32	585 141	32 /32	924 121	29 /30	1550 110	23 /28	3116 101	12 /24
Wharfe at Flint Mill Weir	155 159	155 159	64 84	117 152	73 134	29 /39	563 139	38 /39	871 120	34 /38	1399 106	25 /37	2714 94	13 /35
Derwent at Buttercrambe	54 135	82 183	43 109	37 90	24 76	11 /33	239 122	25 /33	413 127	26 /32	633 109	21 /31	1109 84	6 /29
Trent at Colwick	86 193	78 158	47 111	45 113	45 141	29 /36	300 144	35 /36	469 132	33 /35	742 117	30 /34	1278 90	10 /32
Lud at Louth	48 248	74 262	48 148	42 123	38 123	19 /26	250 169	25 /26	378 151	22 /25	518 120	17 /25	738 75	6 /22
Witham at Claypole Mill	52 277	56 223	34 133	29 112	23 114	25 /35	194 165	32 /35	314 169	34 /35	512 155	33 /34	742 102	16 /32
Little Ouse at Abbey Heath	41 246	42 190	26 121	26 120	32 180	27 /27	167 164	26 /26	252 147	24 /26	372 126	22 /25	545 82	4 /23
Colne at Lexden	41 246	34 152	23 128	13 71	22 167	33 /35	132 149	32 /35	190 139	31 /34	325 132	30 /33	461 87	8 /31
Lee at Feildes Weir (natr.)	32 175	41 192	25 130	19 98	30 203	103 /108	148 156	98 /108	251 154	99 /107	404 141	97 /105	568 88	33 /101
Thames at Kingston (natr.)	44 146	71 193	43 129	29 94	32 145	97 /112	219 143	97 /111	336 137	99 /111	602 136	102 /110	905 92	42 /108
Coln at Bibury	49 123	102 203	67 127	61 114	51 121	25 /31	331 136	30 /31	496 126	27 /30	890 128	29 /29	1494 95	11 /27
Great Stour at Horton	51 151	71 180	36 108	26 78	43 166	28 /29	226 136	24 /28	335 115	22 /28	552 107	16 /26	961 83	4 /22
Itchen at Highbridge+Allbrook	51 123	77 164	67 140	63 123	58 126	34 /36	316 134	34 /36	553 121	33 /35	880 113	27 /34	1621 89	3 /32
Piddle at Baggs Mill	72 172	115 226	79 138	73 132	59 140	28 /31	398 158	30 /30	591 146	29 /29	944 131	25 /27	1577 97	10 /23
Exe at Thorverton	270 205	209 163	137 132	125 148	133 238	38 /38	875 171	38 /38	1160 140	37 /38	1857 120	34 /37	3237 98	14 /35
Taw at Umberleigh	230 198	193 168	124 146	112 165	112 256	36 /36	771 178	36 /36	1108 159	35 /35	1701 130	33 /34	2820 103	19 /32
Tone at Bishops Hull	150 225	138 176	96 131	55 97	77 201	32 /34	516 163	33 /33	643 136	31 /33	1058 122	29 /32	1706 90	6 /30
Severn at Bewdley	132 211	108 152	63 109	65 141	67 213	74 /74	435 161	72 /73	594 132	65 /73	935 113	55 /72	1674 93	20 /70
Teme at Knightsford Bridge	103 191	91 141	65 125	33 68	47 142	20 /25	340 135	22 /24	470 129	23 /24	755 112	19 /23	1248 86	4 /21
Cynon at Abercynon	375 199	281 148	175 128	213 178	164 214	35 /36	1209 167	36 /36	1706 134	34 /34	2930 125	32 /32	5256 105	18 /28
Dee at New Inn	514 210	301 128	176 106	319 175	195 183	22 /25	1505 159	25 /25	2115 117	21 /24	3407 103	15 /24	6753 93	5 /21
Eden at Sheepmount	160 175	114 113	63 85	122 173	79 168	23 /24	539 138	23 /23	780 113	17 /22	1396 111	16 /20	2835 103	9 /16
Clyde at Daldowie	192 192	152 141	81 106	199 259	91 203	30 /31	714 171	31 /31	1022 130	30 /30	1849 128	29 /29	3791 121	27 /27
Carron at New Kelso	317 92	364 119	84 40	451 158	300 213	16 /16	1517 114	11 /15	2252 87	3 /15	4639 97	6 /14	10574 102	7 /12
Ewe at Poolewe	264 95	258 98	159 86	326 163	264 190	24 /24	1272 117	16 /24	1987 93	8 /23	4324 109	17 /22	9334 108	15 /20

Notes:
(i) Values based on gauged flow data unless flagged (natr.), when naturalised data have been used.
(ii) Values are ranked so that lowest runoff is rank 1.
(iii) %LT means percentage of long term average from the start of the record to 1992. For the long periods (at the right of this table), the end date for the long term is 1993.

TABLE 4 START-MONTH RESERVOIR STORAGES UP TO MAY 1994

Area	Reservoir (R)/ Group (G)		Capacity• (Ml)	1993 Dec	1994 Jan	Feb	Mar	Apr	May	1993 May
North West	Northern Command Zone[1]	(G)	133375	44	80	97	93	100	97	91
	Vyrnwy	(R)	55146	64	100	100	100	100	94	87
Northumbria	Teesdale[2]	(G)	87936	69	100	97	96	100	99	95
	Kielder	(R)	199175*	80*	99*	98*	91*	96*	93*	91*
Severn-Trent	Clywedog	(R)	44922	83	100	100	98	99	96	95
	Derwent Valley[3]	(G)	39525	79	100	100	99	100	97	81
Yorkshire	Washburn[4]	(G)	22035	59	92	100	98	100	94	91
	Bradford supply[5]	(G)	41407	76	97	99	98	98	96	83
Anglian	Grafham	(R)	58707	93	89	93	98	91	96	93
	Rutland	(R)	130061	88	95	96	97	96	96	94
Thames	London[6]	(G)	207569	88	87	87	87	89	89	95
	Farmoor [7]	(G)	13843	99	98	98	99	98	98	99
Southern	Bewl	(R)	28170	82	97	100	92	100	100	97
	Ardingly	(R)	4685	100	100	100	100	100	100	100
Wessex	Clatworthy	(R)	5364*	68	100	100	100	100	99	86
	Bristol W [8]	(G)	38666*	60*	88*	88*	99*	99*	98*	89*
South West	Colliford	(R)	28540	88	98	100	100	100	100	83
	Roadford	(R)	34500	78	92	98	97	100	97	78
	Wimbleball[9]	(R)	21320	82	100	100	100	100	99	92
	Stithians	(R)	5205	100	100	100	100	100	96	83
Welsh	Celyn + Brenig	(G)	131155	84	100	100	100	100	99	95
	Brianne	(R)	62140	95	100	100	100	100	100	99
	Big Five[10]	(G)	69762	84	98	99	99	100	97	89
	Elan Valley[11]	(G)	99106	99	100	100	100	100	99	98
Lothian	Edinburgh/Mid Lothian	(G)	97639	78+	92	97	94	99	98	99
	West Lothian	(G)	5613	100	100	99	96	99	100	100
	East Lothian	(G)	10206	87	98	97	99	98	99	100

• Live or usable capacity (unless indicated otherwise)

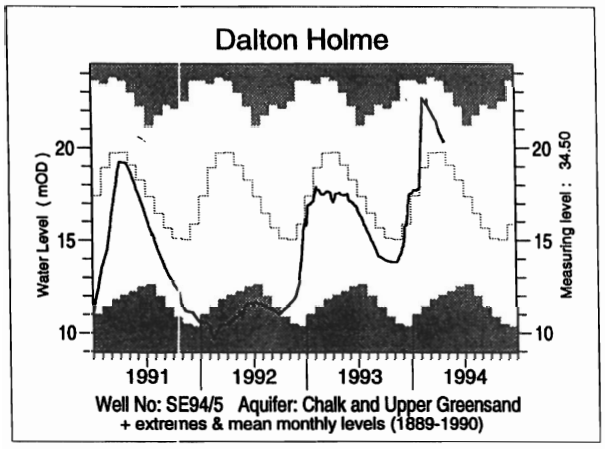
* Gross storage/percentage of gross storage

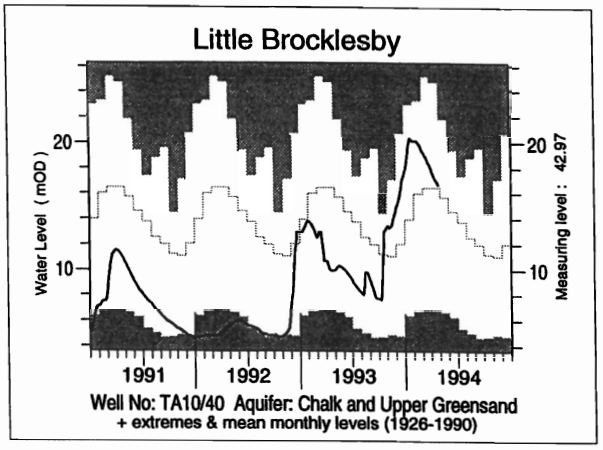
\+ Megget reservoir held at 75% capacity for repairs

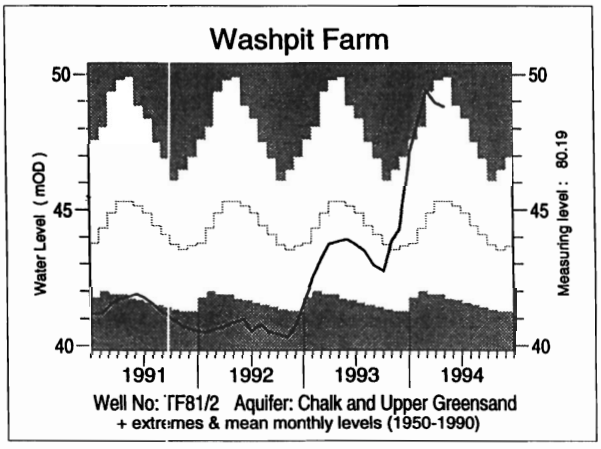
1. Includes Haweswater, Thirlmere, Stocks and Barnacre.
2. Cow Green, Selset, Grassholme, Balderhead, Blackton and Hury.
3. Howden, Derwent and Ladybower.
4. Swinsty, Fewston, Thruscross and Eccup.
5. The Nidd/Barden group (Scar House, Angram, Upper Barden, Lower Barden and Chelker) plus Grimwith.
6. Lower Thames (includes Queen Mother, Wraysbury, Queen Mary, King George VI and Queen Elizabeth II) and Lee Valley (includes King George and William Girling) groups - pumped storages.
7. Farmoor 1 and 2 - pumped storages.
8. Blagdon, Chew Valley and others.
9. Shared between South West (river regulation for abstraction) and Wessex (direct supply).
10. Usk, Talybont, Llandegfedd (pumped storage), Taf Fechan, Taf Fawr.
11. Claerwen, Caban Coch, Pen y Garreg and Craig Goch.

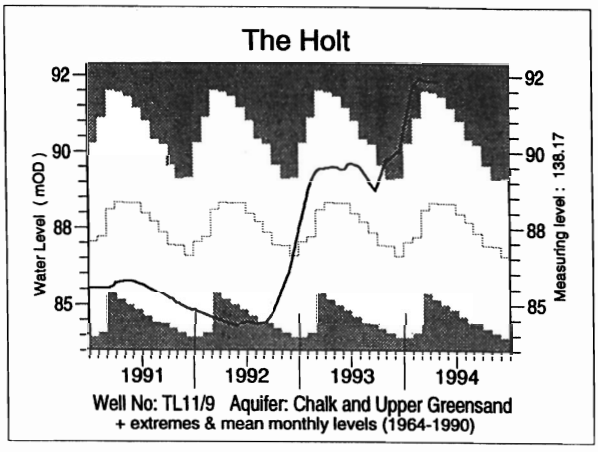
Note: Variations in storage depend on the balance between inputs (from catchment rainfall and any pumping) and outputs (to supply, compensation flow, HEP, amenity). There will be additional losses due to evaporation, especially in the summer months. Operational strategies for making the most efficient use of water stocks will further affect reservoir storages. Table 4 provides a link between the hydrological conditions described elsewhere in the report and the water resources situation.

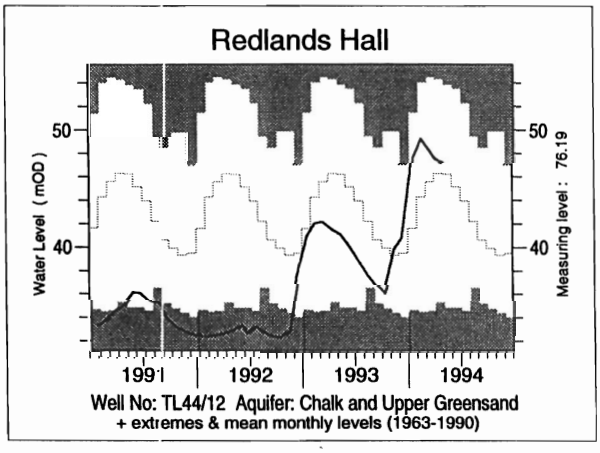
FIGURE 2 GROUNDWATER LEVEL HYDROGRAPHS

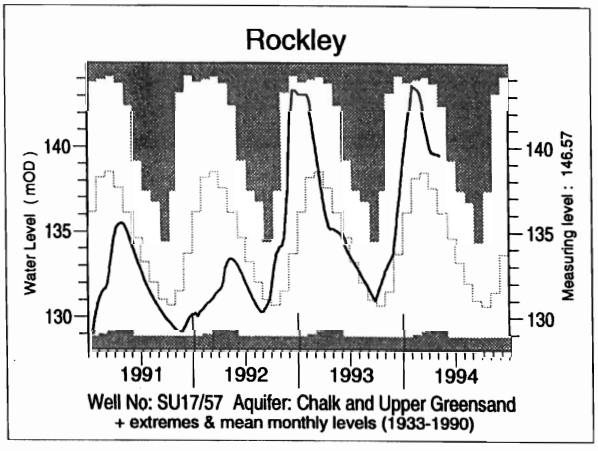


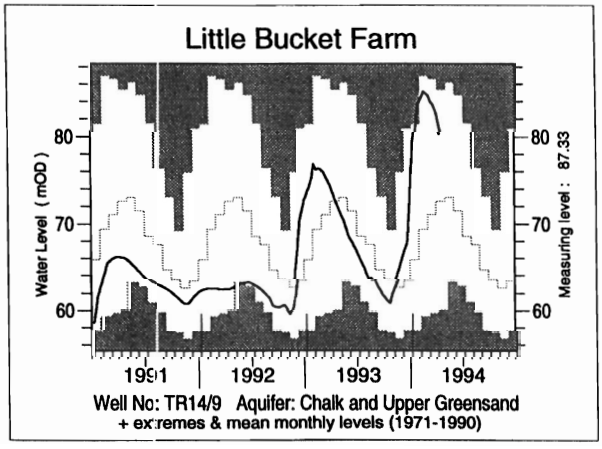


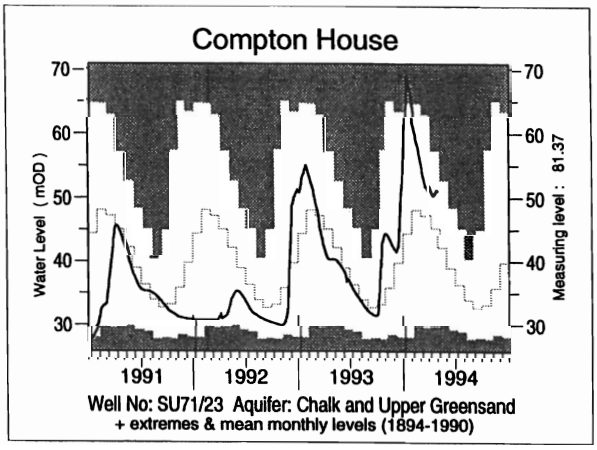


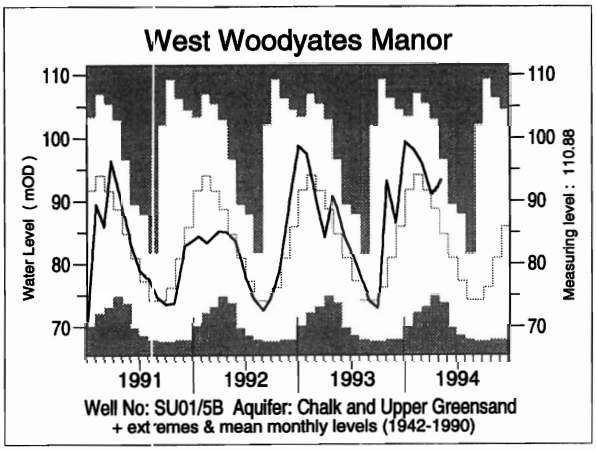


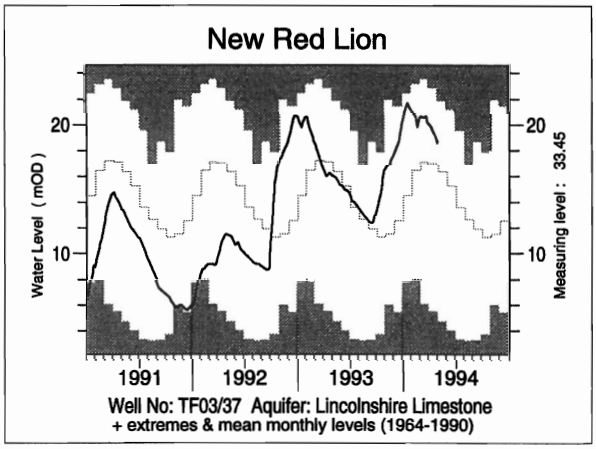


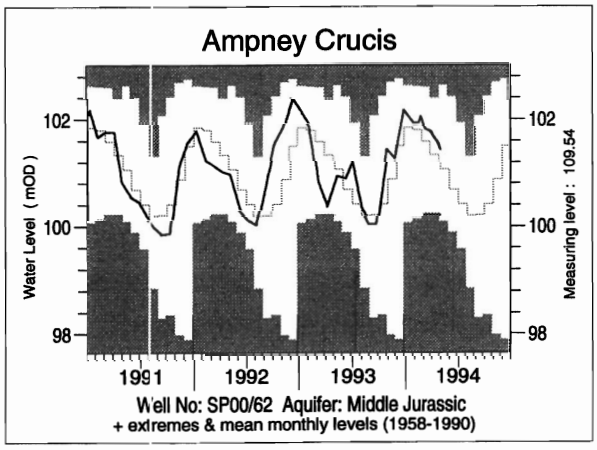


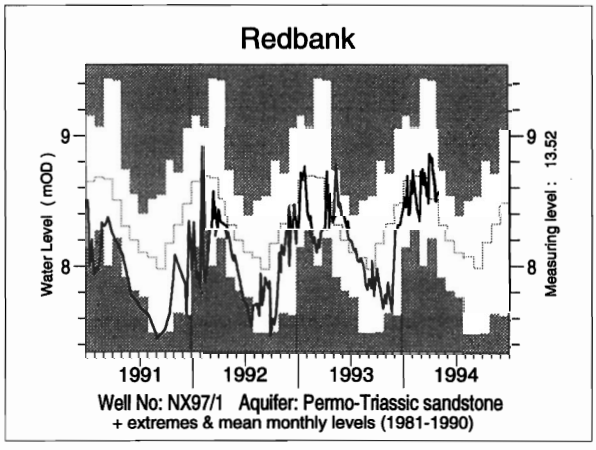


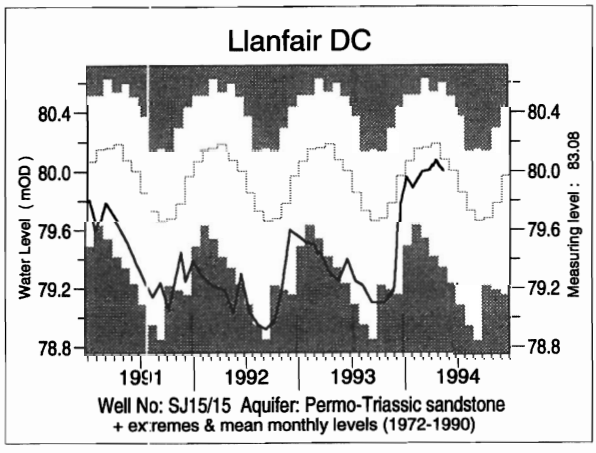


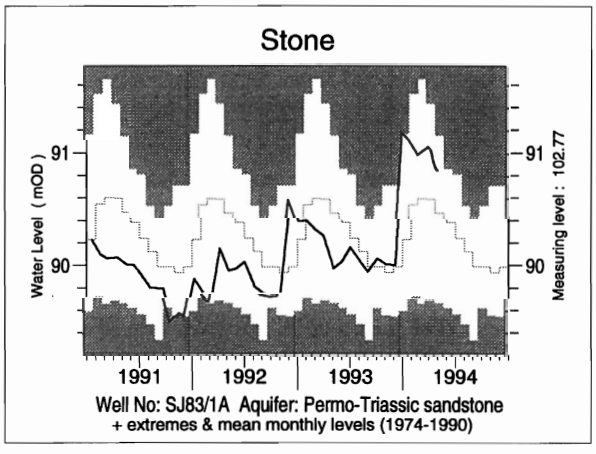

West Woodyates Manor
Water Level (mOD)
Measuring level : 110.88
1991
1992
1993
1994
Well No: SU01/5B Aquifer: Chalk and Upper Greensand
+ extremes & mean monthly levels (1942-1990)

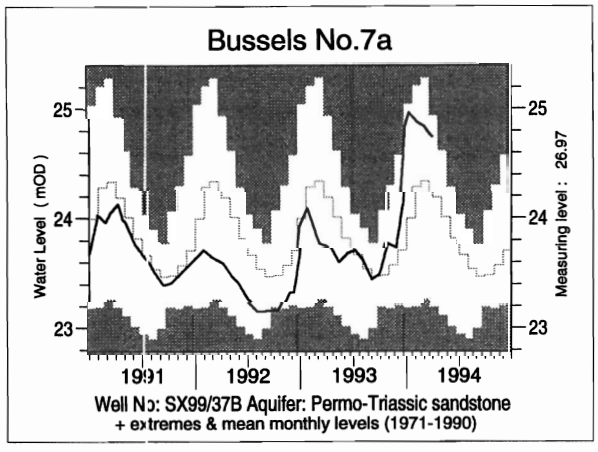

New Red Lion
Water Level (mOD)
Measuring level : 33.45
1991
1992
1993
1994
Well No: TF03/37 Aquifer: Lincolnshire Limestone
+ extremes & mean monthly levels (1964-1990)


Ampney Crucis
Water Level (mOD)
Measuring level : 109.54
1991
1992
1993
1994
Well No: SP00/62 Aquifer: Middle Jurassic
+ extremes & mean monthly levels (1958-1990)


Redbank
Water Level (mOD)
Measuring level : 13.52
1991
1992
1993
1994
Well No: NX97/1 Aquifer: Permo-Triassic sandstone
+ extremes & mean monthly levels (1981-1990)


Llanfair DC
Water Level (mOD)
Measuring level : 83.08
1991
1992
1993
1994
Well No: SJ15/15 Aquifer: Permo-Triassic sandstone
+ extremes & mean monthly levels (1972-1990)


Stone
Water Level (mOD)
Measuring level : 102.77
1991
1992
1993
1994
Well No: SJ83/1A Aquifer: Permo-Triassic sandstone
+ extremes & mean monthly levels (1974-1990)


Bussels No.7a
Water Level (mOD)
Measuring level : 26.97
1991
1992
1993
1994
Well No: SX99/37B Aquifer: Permo-Triassic sandstone
+ extremes & mean monthly levels (1971-1990)

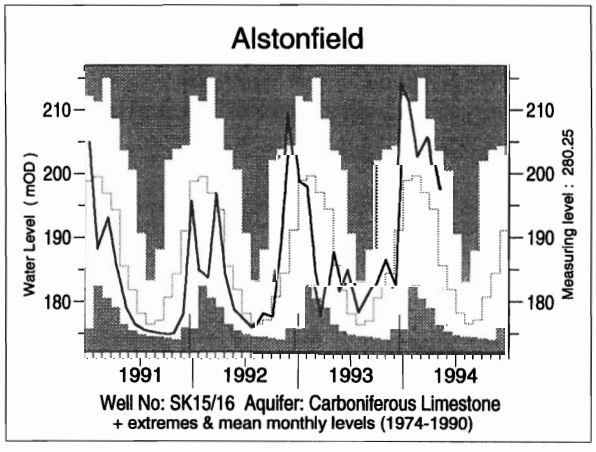

Alstonfield
Water Level (mOD)
Measuring level : 280.25
1991
1992
1993
1994
Well No: SK15/16 Aquifer: Carboniferous Limestone
+ extremes & mean monthly levels (1974-1990)

TABLE 5 A COMPARISON OF APRIL GROUNDWATER LEVELS: 1993 AND 1994

Site	Aquifer	Records commence	Minimum April level	Average April level	Maximum April level	April 1993		April/May 1994	
			<1994	<1994	<1994	day	level	day	level
Dalton Holme	C & UGS	1889	10.46	19.70	23.60	30/04	17.55	22/04	20.33
Little Brocklesby	C & UGS	1926	4.92	15.39	24.69	27/04	9.93	27/04	16.47
Washpit Farm	C & UGS	1950	40.71	45.25	49.77	01/04	43.73	03/05	48.81
The Holt	C & UGS	1964	84.35	88.04	91.92	28/04	89.47	02/05	92.18
Therfield Rectory	C & UGS	1883	dry <71.6	80.37	97.51	25/04	80.43	02/05	87.26
Redlands Hall	C & UGS	1964	32.85	45.07	54.32	16/04	41.50	20/04	47.17
Rockley	C & UGS	1933	129.16	137.43	143.68	25/04	135.15	02/05	139.60
Little Bucket Farm	C & UGS	1971	60.02	71.34	85.37	29/04	71.93	11/04	80.42
Compton House	C & UGS	1984	29.50	44.07	57.10	28/04	40.30	26/04	51.06
Chilgrove House	C & UGS	1836	36.88	52.56	70.09	28/04	48.85	26/04	61.24
West Dean No.3	C & UGS	1940	1.34	2.07	3.68	30/04	1.87	29/04	2.41
Lime Kiln Way	C & UGS	1969	124.00	125.43	126.23	21/04	124.42	20/04	125.91
Ashton Farm	C & UGS	1974	65.01	69.36	71.20	29/04	68.23	29/04	70.32
West Woodyates Manor	C & UGS	1942	74.86	88.18	103.00	29/04	90.82	29/04	93.43
New Red Lion	LLst	1964	5.61	16.57	22.97	28/04	16.07	28/04	18.77
Ampney Crucis	Mid Jur	1958	100.29	101.72	103.01	07/04	100.46	02/05	101.80
Dunmurry (NI)	PTS	1985	27.91	28.64	29.45	20/04	28.76	25/04	27.65
Yew Tree Farm	PTS	1973	12.52	13.54	13.77	29/04	13.62	27/04	13.79
Llanfair D.C	PTS	1972	79.19	80.02	80.54	25/04	79.30	04/05	80.02
Morris Dancers	PTS	1969	30.87	32.48	33.50	16/04	31.87	08/04	32.26
Weeford Flats	PTS	1966	dry <88.61	89.96	91.76	07/04	dry <88.61	04/05	90.31
Stone	PTS	1974	89.69	90.56	91.44	01/04	90.26	05/05	90.83
Skirwith	PTS	1978	130.17	130.60	131.01	28/04	130.43	22/04	130.85
Redbank	PTS	1981	8.22	8.49	9.43	29/04	8.33	29/04	8.57
Bussels No.7A	PTS	1972	23.19	24.13	24.93	14/04	23.73	14/04	24.72
Rushyford NE	MgLst	1967	65.40	72.51	76.82	30/04	75.28	20/04	76.78
Peggy Ellerton	MgLst	1968	31.46	34.49	37.39	13/04	32.04	22/04	33.84
Alstonfield	CLst	1974	177.83	193.96	208.75	01/04	177.83	03/05	196.86

groundwater levels are in metres above Ordnance Datum

C & UGS	Chalk and Upper Greensand	Mid Jur	Middle Jurassic limestones
LLst	Lincolnshire Limestone	MgLst	Magnesian Limestone
PTS	Permo-Triassic sandstones	CLst	Carboniferous Limestone

Note: Table 5 has been redesigned to include both monthly minimum and monthly maximum levels.

FIGURE 3 LOCATION MAP OF GAUGING STATIONS AND GROUNDWATER INDEX WELLS